The opinion in support of the decision being entered today
is *not* binding precedent of the Board

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SHINJI MORIYAMA,
YOSHIHIRO FUKUSHIMA, and HIDENORI TACHI

Appeal 2007-1855
Application 10/815,650
Technology Center 1700

Decided: July 31, 2007

Before CHUNG K. PAK, CHARLES F. WARREN, and
LINDA M. GAUDETTE, *Administrative Patent Judges.*

WARREN, *Administrative Patent Judge.*

DECISION ON APPEAL

Applicants appeal to the Board from the decision of the Primary Examiner finally rejecting claims 1 through 10 in the Office Action mailed March 29, 2006. 35 U.S.C. §§ 6 and 134(a) (2002); 37 C.F.R. § 41.31(a) (2005).

The appeal was heard on July 11, 2007.

We affirm the decision of the Primary Examiner.

Claim 1 illustrates Appellants' invention of a toner for electrostatic image development, and is representative of the claims on appeal:

1. A toner for electrostatic image development, comprising:

a resin binder; and

a colorant comprising a charcoal powder, wherein the charcoal powder has a volume-based median particle size (D_{50}) of 5.6 μm or less, and a coefficient of variation of 80% or less.

The Examiner relies on the evidence in these references:

Machida (as translated)[1]	JP 61-203463 A	Sep. 9, 1986
Nanya	US 5,079,123	Jan. 7, 1992
Aoki	US 6,383,705 B2	May 7, 2002

Grant, "activated," *Grant & Hackh's Chemical Dictionary* 14 (5th ed., McGraw-Hill Book Company, New York. 1987).

Diamond, *Handbook of Imaging Materials* 160-63 (Marcel Dekker, Inc., New York, 1991).

Appellants request review of the following grounds of rejection (Br. 3) advanced on appeal:

claims 1 through 3, 5, 9 and 10 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being obvious over Machida evidenced by Grant, Diamond, and Appellants' disclosure in the Specification at page 3, lines 10-16; page 11, line 23, to page 12, line 1; and Table 1 (Answer 6-10);

claim 4 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being obvious over Machida evidenced by Grant and Appellants' disclosure in the Specification at page 3, lines 10-16; page 11, line 23, to page 12, line 1, and Table 1 (*id.* 10-12);

claim 6 under 35 U.S.C. § 103(a) as unpatentable over Machida evidenced by Grant, Appellants' disclosure in the Specification at page 3, lines 10-16;

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[1] We refer to the translation of Machida prepared for the USPTO by Diplomatic Language Services, Inc. in October 1997 and relied on by the Examiner (Answer, e.g., 6).

page 11, line 23, to page 12, line 1; and Table 1, and Aoki (*id.* 12-13); and claims 7 and 8 under 35 U.S.C. § 103(a) as unpatentable over Machida evidenced by Grant, Appellants' disclosure in the Specification at page 3, lines 10-16; page 11, line 23, to page 12, line 1; and Table 1, and Nanya (*id.* 13-15).

Appellants argue the grounds of rejection as a whole based on the limitations in claim 1 (Br. in entirety). Thus, we decide this appeal based on claim 1. 37 C.F.R. § 41.37(c)(1)(vii) (2005).

The Examiner finds Machida discloses toner compositions falling within appealed claim 1 which includes an activated carbon with "the trade name 'Shirawashi A-1' obtained from Takeda Pharmaceutical Industries K.K.," that has "an average particle diameter of 4.5 μm . . . within the numerical value of the particle size range of '5.6 μm or less'" specified in claim 1 (Answer 6, citing Machida 8 and Table 3). With respect to Appellant Moriyama's testimony[2] that "[t]he commercial product described in the English translation of [Machida] . . . . is actually . . . "Shirasagi A-1" now "obtained from the manufacturer (Japan EnviroChemicals, Ltd." (Moriyama Declaration ¶¶ 3 and 6), the Examiner contends "there is no reason to think that the actual name or source makes a difference" (Answer 16). The Examiner finds Grant evinces activated carbon is charcoal as specified in claim 1 (*id.* 7-8).

The Examiner finds Machida does not disclose the "4.5 μm average particle size" is a volume-based median particle size with a coefficient of variation (CV) of 80% or less as specified in claim 1 (Answer 8). The Examiner finds Machida discloses "toner (1)" with 4.5 μm average particle

size activated carbon "exhibited stable chargeability for 10 hours"' and "provided images with 'excellent' fine line reproducibility, and with no occurrence of fogging after 50,000 copies" (*id.*, citing Machida 10-12 and Tables 1-3).

The Examiner contends "[t]hese are the properties sought by applicants," finding the Specification discloses that when charcoal powder exceeds the claimed physical limits with respect to medium particle size, "'it is difficult to contain the charcoal powder in the toner'" and "'the state of dispersion of the charcoal powder in the toner is inhomogeneous'" such that "'the degree of . . . blackness and the covering strength [are] considerably lower but also the chargeability is adversely affected, thereby resulting in the lowering of the image quality'" (Answer 8-9, citing Specification at page 3, ll. 10-16). The Examiner contends

> [t]he instant specification shows that a toner comprising a charcoal powder having a volume-based median particle size greater than 5.6 μm and a coefficient of variation greater than 80% provides images with "poor" thin-line reproducibility and background fogging; while toners comprising the charcoal powder that possesses the particle size and coefficient of variation within the scope of instant claim 1 provided images with "good" thin-line reproducibility and low occurrence of background fogging.

Answer 9, citing Specification at page 22, Table 1, Examples 1-4 and Comparative Example 1.

The Examiner determines that because Machida's "toner (1) exhibits the properties sought by applicants, it is reasonable to presume that the

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[2] Appellants submitted the Declaration Under 37 C.F.R. 1.132 of Appellant Shinji Moriyama (Moriyama Declaration) on October 27, 2005 and rely thereon herein (Br., e.g., 4-5 and Evidence Appendix).

Machida activated carbon has a volume-based median particle size and a coefficient of variation as recited in instant claim 1," thus shifting the burden to Appellants (Answer 9).

The Examiner contends, with respect to claim 5, that Machida does not describe the claimed dielectric loss tangent range, but points out Machida's "toner (1) provided images with no occurrence of fogging after 50,000 copies, which is the property sought by applicants" (Answer 10, citing Machida Table 3 at 12). Thus, the Examiner determines "it is reasonable to presume that the Machida toner has a dielectric loss tangent" falling with the claimed range, shifting the burden to Appellants to prove otherwise (Answer 10).

Appellants find Machida discloses using an activated carbon having a particle size of "approximately 5 μm or less," and exemplifies a particle size of 4.5 μm in "Toner (1)" which "results in, *inter alia*, good fine line reproducibility" as shown in Table 3 (Br. 4; original under strike emphasis omitted). Appellants contend the Moriyama Declaration establishes the activated carbon identified as "Shirasagi A-1" which appears to have been "pulverized before use" by Machida making it "impossible to determine what the CV was for" Machida's exemplified activated carbon (*id.* 4-6 and 8). Thus, Appellants contend Machida's disclosure is insufficient with respect to CV such that one skilled in the art practicing the disclosure "would be without a clue regarding any significance of CV" and "does not enable the presently-claimed invention" (*id.* 5 and 6). Appellants contend "[t]he Moriyama Declaration demonstrates that a CV above 80% results in poor background fogging and thin-line reproducibility," pointing out that Machida's data showing a particle diameter of 7.5 μm is not as good as an

approximate particle diameter of 5 μm or less "says nothing about a particle diameter of 5.59 μm as used in the Moriyama Declaration, which diameter . . . is approximately 5 μm" (*id.* 5). Appellants contend the Examiner improperly equated "qualitative expression of results, such as 'good' and 'poor' thin-line reproducibility" disclosed in the Specification and the prior art "to find that means to obtain the results are quantitatively the same, such as a CV of 80% or less" as "[t]here is no indication that the respective standards of measurement" in the Specification and Machida are the same (*id.* 7). Appellants contend it is not "proper for the Examiner to use Applicants' own comparative data, which is not prior art, against them" (*id.*). Appellants contend this case is not one of "inherent anticipation, wherein an inventor discovered an inherent property of the prior art" because "it is impossible to verify that Machida's toner (1) does, in fact, meet the CV limitation, since Machida has not disclosed how his toner (1) was prepared" and thus, Machida does not describe and enable the claimed invention (*id.* 7-8p; original emphasis omitted).

The Examiner responds Appellants have not provided convincing evidence because Appellants appear "to know how to obtain the Machida activated carbon average particle diameter of 4.5 μm from the commercial product used in Machida and how to make the Machida toner (1)" but have not "provided any evidence to show why the CV of the Machida activated carbon, roughly, the width of distribution of particle diameters about the volume average particle size, D_{50}, cannot be determined once the Machida toner (1) is reproduced" (Answer 18). The Examiner finds "[c]omparative example 1 in the Declaration exemplifies a toner comprising a charcoal powder having a particle size of 5.59 μm and a CV of 88.2% and a

particular binder resin" which "produced images with 'poor' background fogging and 'poor' thin-line reproducibility" while Machida discloses that toner (1) with an activated carbon powder having average particle diameter of 4.5 μm provides "excellent" line reproducibility and no occurrence of fogging after 50,000 copies (*id.* 19). The Examiner contends "even if the evaluations used in Machida were not identical to those used in the instant specification, the preponderance of evidence shows that the toner in [Declaration] comparative example 1 does not provide the images provided by the Machida toner (1)" (*id.*). The Examiner contends Machida's toners containing activated carbon powder having average particle sizes of 7.5 μm and 10 μm "provided images with slight occurrence of fogging after 40,000 copies and occurrence of fogging after 10,000 copies, respectively," and the reference teaches that "fogging and filming" occurs with toners having particles greater than 5 μm (*id.* 19-20). The Examiners contends Appellants have not established that Machida's particle size of "approximately 5 μm or less" includes the particle size 5.59 μm (*id.* 20-21).

The Examiner contends Machida's silence with respect to CV does not relieve Appellants' burden because Appellants disclose the claimed physical characteristics "are responsible for the toner's blackness, covering strength, and chargeability – and ultimately, its ability to provide high quality images," and Machida similarly discloses "stable chargeability, small sized particles, and superior image quality" (Answer 21). The Examiner contends Appellants' disclosure of the properties of toners is appropriate use of available evidence to determine whether it is reasonable to shift the burden to Appellants to distinguish over Machida (*id.* 21-23). The Examiner contends one of ordinary skill in the art would compare

results with respect to "thin-line reproducibility" and "fogging" in the Specification with those in Machida even though not determined by the same method because Machida discloses fogging can be visually determined as does the Specification, and the Specification discloses visual observation of "thin-line reproducibility" while Machida uses a commercial chart therefor (*id.* 23-24, citing Specification at page 2, ll. 15-20, page 21, ll. 10-16, and Table 1 art page 22, and Machida at 11:13-14).

Appellants reply that the Specification Examples and Machida's Working Examples use different amounts of different materials and thus, the results in Machida cannot be attributed to a particular CV of the activated carbon used, even if the CV was known, and the differences in methodologies of evaluating results used for the criteria in the Specification and Machida does not mean the charcoal powder of Machida meets the claimed CV value (Reply Br. 3-4).

The issue in this appeal is whether it reasonably appears from the record that the activated carbon particles disclosed by Machida in the toners taught therein inherently have the volume-based medium particle size and the CV based thereon specified in claim 1 necessary to establish a prima facie case of anticipation and of obviousness in the grounds of rejection maintained on appeal.

The plain language of claim 1 specifies any toner composition comprising at least any amount of any resin binder and any amount of any colorant, the latter comprising at least any amount of any manner of charcoal powder that has the physical properties of a volume-based median particle size (D_{50}) of 5.6 μm or less, and a coefficient of variation of 80% or less. The "charcoal powder" can include "[c]ommercially available

products of the wood-based and coconut-shell-based active carbons" such as, among other things, "'Shirasagi KA-2' (commercially available from TAKEDA CHEMICAL INDUSTRIES, LTD.)'" (Specification 4:13-18). The CV is disclosed as the "standard deviation/D_{50} x 100" based on the volume-based median particle size (D_{50}), both of which can be "determined with a Coulter counter 'Coulter Multisizer II'" following the disclosed method (*id.* 13-15). Stated another way, "the volume-based median particle size (D_{50}) refers to a particle size at which the cumulative volume frequency (%) based on the particle size from the small particle size side is 50%" (*id.* 3). Dependent claim 5 specifies "the toner has a dielectric loss tangent of 0.01 or less."

Machida would have disclosed to one of skill and one of ordinary skill in this art a toner containing a binder and a colorant, the latter containing activated carbon that can "be any type . . . such as coconut shells, wood carbon, etc.," wherein "[t]he particle size of the activated carbon should be approximately 5 μm or less" and "[c]ommercially sold activated carbon may also be used without pretreatment" (Machida 3-4).

Machida's Working Examples 1 and 2 use an activated carbon "[s]old as Shirawashi A-1 by Takeda Pharmaceutical Industries K.K." (*id.* 8). Machida discloses blending all of the toner ingredients into a mixture that is first coarse pulverized and then jet pulverized to obtain "a toner (1) having a particle diameter of 4 to 20 μm and an average particle diameter of 11.5 μm" in Working Example 1 and "a toner (2) having a mean particle diameter of 11.4 μm" in Working Example 2 (*id.* 8-9). The "active carbon particle diameter (μm)" of the charcoal powder used in toners (1) and (2) of Working Examples 1 and 2, respectively, is 4.5 μm (*id.* 12 and Table 3).

Machida discloses the charge amounts of the toners of Working Examples 1 and 2 are "stabilized" and copy images had "excellent graduation reproducibility, fine line reproducibility, and fineness of texture" as compared to Comparative Examples with "only carbon black as the colorant" (*id.* 8-12 and Tables 1-3).

Machida's Working Example 3 includes toners (6), (7), and (8) which have the same composition as Working Example 1 except "the average particle diameter of the activated carbon was changed to 1.0 μm, 7.5 μm, and 10 μm," respectively (*id.* 12 and Table 3). Machida discloses in Table 3 that toners (1) and (6) with active carbon having average particle sizes 4.5 μm, and 1.0 μm, respectively, exhibited "no occurrence after 50,000 copies" of "fogging," while toners (7) and (8) with active carbon having average particle sizes 7.5 μm, and 10.0 μm, respectively, exhibited "fogging" with "slight occurrence after 40,000 copies" and "occurrence after 10,000 copies," respectively (*id.* 12 and Table 3).

Machida discloses "[f]rom Table 3 it can be seen that in toners (1) and (6), in which an average particle diameter of less than 5 μm was used, the fogging and filming conditions were good, but in toners (7) and (8), which used particles greater than 5 μm, fogging and filming occurred," thus concluding "the average particle diameter of the activated carbon in the present invention should be no more than 5 μm" (*id.* 13).

The written description in the Specification includes the following:

> When the volume-based median particle size of the charcoal powder is larger than 5.6 μm, it is difficult to contain the charcoal powder in the toner. Also, when the coefficient of variation exceeds 80%, the state of dispersion of the charcoal powder in the toner is inhomogeneous. Therefore, when these requirements are not satisfied, not only the degree of are [sic]

> blackness and the covering strength considerably lowered but also the chargeability is adversely affected, thereby resulting in the lowering of the image quality.

Id. 3:9-16.

> The dielectric loss tangent (tan δ) of the toner is preferably from 0.001 to 0.01, more preferably from 0.002 to 0.006, from the viewpoint of the printed image quality, especially the background fogging, which is affected by the dispersibility of the charcoal powder in the toner. . . . The tan δ of the toner can be adjusted by changing the kinds, the amounts and the pre-mixing time of the raw materials, various conditions in the kneading step, and the like.

Id. 11:23 to 12:7.

With respect to Specification Table 1, Examples 1, 3, and 4 are prepared with "KA-2 (Shirasagi KA-2): coconut shell-based activated carbon, commercially available from TAKEDA CHEMICAL INDUSTRIES, LTD," that has a D_{50} of 3.81 μm and a CV of 60.3%, and the toners have a BG (background fogging) of 0.37 μm, 0.31 μm, and 0.61 μm, respectively, and "good" "thin-line reproducibility;" Example 2 is prepared with "YP-17: coconut shell-based activated carbon, commercially available from KURARAY CHEMICAL CO., LTD," that has a D_{50} of 5.16 μm and a CV of 59.9%, and the toner has a BG of 0.50 and "good" "thin-line reproducibility;" and Comparative Examples 1 and 2 are prepared from two different commercial wood-based activated carbons having a D_{50} of 5.59 μm and 20 μm, respectively, and a CV of 88.2% and 78.3%, respectively, and the toners have a BG of 1.19 and 0.81 and "poor" "thin-line reproducibility (Specification 22). The Specification reports the results show "the toners of Examples 1 to 4 have low occurrences of background fogging and excellent

thin-line reproducibility, so that the image quality is excellent . . . [and] sufficient degree of blackness and covering strength are obtained" (*id.*).

We find no evidence in the Specification that the commercial activated carbon products were modified by pulverization to obtain the stated D_{50} and CV values.

Appellant Moriyama testifies the commercial activated carbon powder "Shirasagi A-1 was measured with a laser diffraction particle size analyzer SALD-2000J, . . . and found to have a volume-based median particle size (D_{50}) of about 39.605 μm" (Moriyama Declaration ¶ 4, *see* ¶¶ 3 and 6; *see above* p. 3). Appellant Moriyama testifies "[w]hile the SALD-2000J is different from the Coulter Multisizer II described in the . . . application for measuring (D_{50}), it would be expected, nevertheless, that the (D_{50}) using the Coulter Multisizer II would have been of the same order of magnitude, and greater than the maximum of 5.6 μm of the present claims" (Moriyama Declaration ¶ 5).

Appellant Moriyama testifies:

> In Working Example 3 of Machida, there is no disclosure that toners (1), (6), (7) and (8) were produced from different charcoal powder starting materials. Thus, it is presumed that the Shirasagi A-1 was pulverized so as to be adjusted to have the desired particle size used. The coefficient of variation (CV) value can be freely adjusted by conditions of pulverization so that the CV value of the charcoal powder used in the examples of Machida cannot be presumed. To that end, the following experiments were conducted under my supervision and/or control.

Id. ¶ 7 (original emphasis omitted).

Appellant Moriyama testifies "[a] toner was prepared using the same raw materials as in [Specification] Comparative Example 1" according to a

method in which a commercial wood-based activated carbon "charcoal powder 'Taiko Activated Carbon SA 1000SA" having a D_{50} of 5.59 μm and a CV of 88.2% is first melt-kneaded with Resins A and B to obtain a "masterbatch" that is then combined with larger amounts of the resins and a number of additional ingredients, and the resulting mixture pulverized to a volume average particle size of 10 μm which was combined with further ingredients to obtain a toner (Moriyama Declaration ¶ 8). We find this method differs from that of Specification Example 1 in which all of the same toner ingredients, including the same commercial wood-based activated carbon, were simultaneously mixed followed by pulverization to a volume average particle size of 10 μm which was combined with further ingredients to obtain a toner (Specification 18).

Appellant Moriyama testifies "[t]he dielectric loss tangent (tan d) of the resulting toner was 0.00514," the "background fogging (BG) and the thin-line reproducibility . . . evaluated according to [Specification] Test Example 2 . . . was '1.02', and the thin-line reproducibility was 'poor'" (Moriyama Declaration ¶ 8). We find Specification Comparative Example 1, as reported in Specification Table 1, has a dielectric loss tangent (tan δ) of 0.02002, a BG of 1.19 and "poor" thin-line reproducibility (Specification 22; *see also* 15 and 21).

Appellant Moriyama further testifies "[t]he toner . . . showed an increase in dispersibility of the charcoal powder by using the masterbatch" which is also "evident from the fact that the dielectric loss tangent of the toner is dramatically small as compared with that of the toner of Comparative Example 1" (Moriyama Declaration ¶ 8). Appellant Moriyama testifies that despite the increased dispersibility, there was still "poor BG

and the thin-line reproducibility . . . [s]ince the charcoal powder has too large CV, the charcoal powder that cannot be housed in the toner is exposed on the toner surface, thereby inhibiting the charging of the toner," and thus, "[t]he data show that the effects of the present invention cannot be obtained when the CV value of the used charcoal powder does not satisfy the requirement of a CV of 80% or less" (Moriyama Declaration ¶¶ 8 and 9). We find a similar conclusion reported in the Specification for Comparative Example 1 (Specification 23:10-19).

We determine there is no difference between the kinds of materials disclosed in the written description in the Specification and described in Machida for the resin binder and the colorant ingredients, including activated carbon as charcoal powder, of the claimed and prior art toner compositions. There is also no difference in the methods disclosed in the Specification and described in Machida by which the ingredients can be blended and pulverized to obtain a toner composition and apply the toner composition to obtain electrostatic image development resulting in printed copies, or in the methods of evaluating the copies on the same properties although by somewhat different tests. The activated carbon is disclosed in the Specification and claimed to have a volume-based median particle size (D_{50}) of 5.6 μm or less, and a coefficient of variation of 80% or less based on the D_{50}, while Machida describes an average particle size of no more than 5 μm. Indeed, the commercially available, coconut shell-based activated carbon Shirasagi KA-2 and YP-17 used in the Specification examples have a D_{50} of 3.81 μm and 5.15 μm, respectively, and a CV of 60.3% and 59.9%, respectively, are illustrated in the Specification. Machida's examples illustrate activated carbon "Shirasagi A-1" with an

average particle size of 1.0 μm and 4.5 μm, but the reference apparently does not establish the material from which this commercial activated carbon is made.

In this respect, the Examiner does not contest Appellant Moriyama's testimony that commercially activated carbon "Shirasagi A-1" exemplified in Machida has a D_{50} of 39.605 μm (*see above* p. 3). *See, e.g., In re Reuter*, 670 F.2d 1015, 1022-23, 210 USPQ 249, 256 (CCPA 1981) (a factual statement by an expert in the art is entitled to full consideration in the absence of evidence to the contrary). Thus, on this record, the "Shirasagi A-1" particulate material would have to be reduced, such as by pulverization in some manner, to obtain an average particle size of no more than 5 μm, as well as to obtain the exemplified activated carbon having average particle sizes of 1.0 μm and 4.5 μm used in toners (6) and (1), respectively, as Appellant Moriyama testifies. Accordingly, one of skill and one of ordinary skill in the art routinely following the teachings of Machida would have recognized that "Shirasagi A-1" particulate material would have to be reduced by methods known in the art, including pulverization methods, to fall within the average particle size range of no more than 5 μm taught in the reference as well as practice the illustrative examples of the reference containing this material with average particle sizes of 1.0 μm and 4.5 μm. In this respect, it is well settled that a reference stands for all of the specific teachings thereof as well as the inferences one of ordinary skill in this art would have reasonably been expected to draw therefrom, *see In re Fritch*, 972 F.2d 1260, 1264-65, 23 USPQ2d 1780, 1782-83 (Fed. Cir. 1992); *In re Preda*, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968), presuming skill on the part of this person. *In re Sovish*, 769 F.2d 738, 743, 226 USPQ

Comment [c1]: Thanks, Carolyn!

771, 774 (Fed. Cir. 1985); *see also In re Graves*, 69 F.3d 1147, 1152, 36 USPQ2d 1697, 1701 (Fed. Cir. 1995), and cases cited therein (a reference anticipates the claimed method if the step that is not disclosed therein "is within the knowledge of the skilled artisan").

The evidence in the record does not establish the actual correspondence between the D_{50} and CV measurements used by Appellants to describe the particle size range of the charcoal powder, which can be activated carbon, in the claimed toner compositions, and the average particle size measurement used by Machida to describe the particle size range of the activated carbon in the toner compositions therein. We agree with the Examiner that evidence to compare the claimed toners encompassed by the claims as we have interpreted the claims above, with Machida's disclosure of the range of activated carbon of no more than 5 μm in toner compositions and of toner embodiments containing activated carbon having average particle sizes 1.0 μm and 4.5 μm, with respect to the provisions of § 102(b) and § 103(a) is reasonably provided by the common properties used to evaluate the images prepared with the toner compositions which are disclosed in the Specification and in Machida to be dependent on the particle size of the activated carbon powder therein.

Indeed, we determine the Examiner has established that, prima facie, it reasonably appears from the seemingly similar image results disclosed in the Specification and Machida for toner compositions containing activated carbon in the particles size ranges and embodiments falling therein, respectively, that the claimed toner compositions are identical or substantially identical to the toner compositions disclosed by Machida within the meaning of §§ 102(b) and 103(a). Thus, the burden shifts to

Appellants to establish by effective argument and/or objective evidence that the claimed invention patentably distinguishes over Machida, whether the rejection is considered to be based on § 102(b) or § 103(a). *See, e.g., In re Spada*, 911 F.2d 705, 708-09, 15 USPQ2d 1655, 1657-58 (Fed. Cir. 1990);[3] *In re Best*, 562 F.2d 1252, 1255-56, 195 USPQ 430, 433-34 (CCPA 1977);[4] *In re Skoner*, 517 F.2d 947, 950-51, 186 USPQ 80, 82-83 (CCPA 1975) ("Appellants have chosen to describe their invention in terms of certain physical characteristics of the roughened substrate surface. . . . Merely choosing to describe their invention in this manner does not render patentable their method which is clearly obvious in view of [the reference]." (Citation omitted)).

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[3] The Board held that the compositions claimed by Spada "appear to be identical" to those described by Smith. While Spada criticizes the usage of the word "appear," we think that it was reasonable for the PTO to infer that the polymerization by both Smith and Spada of identical monomers, employing the same or similar polymerization techniques, would produce polymers having the identical composition.

Spada, 911 F.2d at 708, 15 USPQ2d at 1657-58.

[4] Where, as here, the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product. See *In re Ludtke*, [441 F.2d 660, 169 USPQ 563 (CCPA 1971)]. Whether the rejection is based on "inherency" under 35 U.S.C. § 102, on "prima facie obviousness" under 35 U.S.C. § 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced by the PTO's inability to manufacture products or to obtain and compare prior art products. [Footnote and citation omitted.]

Best, 562 F.2d at 1255, 195 USPQ at 433-34.

We are of the opinion Appellants have not carried their burden. We disagree with Appellants that the use of information with respect to the claimed toner compositions in the written description in the Specification in comparing the claimed toner compositions as a whole with the toner compositions of Machida to determine compliance with §§ 102(b) and 103(a) constitutes an improper use of that disclosure. A reasonable interpretation of the claimed toner composition encompassed by claim 1 in light of the Specification entails determination of the full breadth of the ingredients of the claimed product as well as the properties thereof as established in the disclosure. The properties of the toner compositions include the properties of the image imparted to a suitable substrate as disclosed in the Specification.

On this record, we find no basis for Appellants' contentions that Machida does not enable the claimed invention simply because it does not define the particle size of the activated carbon in the same terms used by Appellants, and thus further does not constitute an "inherent anticipation" of the claimed toner composition. It is well settled that the description of a claimed product in different terms or properties not employed by the prior art to describe a product does not establish patentability where the claimed product reasonably appears to be identical or substantially identical to the reference product absent argument or evidence patentably distinguishing the claimed product from the prior art product. *See, e.g., Best*, 562 F.2d at 1256, 195 USPQ at 434 (two of six specified parameters for claimed product also disclosed for prior art product requiring "comparison of those other [four] parameters with the corresponding parameters" of the prior art product to establish patentability); *Skoner*, 517 F.2d at 950-51, 186 USPQ at

82-83 (extent of abrasion of surface claimed in different terms than used to describe surface abrasion in reference "considered inherently the same as" in the reference and does not result in "allowance of claims drawn to unpatentable subject matter merely through the employment of descriptive language not chosen by the prior art").

We do not find in the record scientific argument or evidence supporting Appellants' contention that the subjective evaluations of the image imparted by the claimed toner composition as disclosed in the Specification and by the toner compositions described by Machida as disclosed therein do not provide a reasonable basis for comparison of the claimed and prior art toners. We do not find in the Specification any disclosure that Appellants employed any standard other than that used in the art for the visual emulation of the same image properties visually evaluated by Machida with the use of a commercial chart for this purpose as the Examiner points out. Indeed, Appellants rely on the same methodologies in subjectively visually evaluating image copy obtained in Specification Comparative Example 1 and in Moriyama Declaration Comparative Example asserted to distinguish the claimed toner compositions over those of Machida.

On this record, we are not convinced the evidence in Specification Comparative Example 1 and in the Moriyama Declaration Comparative Example patentably distinguishes the claimed toner compositions encompassed by claim 1 over those of Machida. On this record, we determine the difference in reported results between Specification Comparative Example 1 and the Moriyama Declaration Comparative Example, particularly evinced by a difference in dielectric loss tangent (tan

δ), constitutes no more than the result expected from a difference in the manner in which the same ingredients were processed in forming the two toner compositions. Indeed, as disclosed in the Specification, differences in processing affects the dielectric loss tangent (tan δ) of the toner composition and thus, the image quality produced (Specification 11:23-12:7; *see above* p. 11). Thus, the evidence based on the same toner composition ingredients containing activated carbon having a D_{50} of 5.59 μm ,which on this record falls *outside* of Machida's average particle size range of no more than 5.00 μm for the same material, cannot be said to reflect any patentable difference between the claimed toner compositions and those of Machida, and particularly Machida's exemplified toner compositions (1) and (6) containing activated carbon having an average particle size of 4.5 μm and 1.0 μm, respectively. Indeed, the evidence adduced based on different methods of blending the toner ingredients establishes that it is not the particle size of the activated carbon alone that affects the properties of the toner composition. *Cf. In re Dunn*, 349 F.2d 433, 439, 146 USPQ 479, 483 (CCPA 1965) ("[W]e do not feel it an unreasonable burden on appellants to require comparative examples relied on for non-obviousness to be truly comparative. The cause and effect sought to be proven is lost here in the welter of unfixed variables.").

Therefore, in the absence of evidence comparing claimed toner compositions with Machida's illustrative toner compositions (6) and (1) containing activated carbon powder with an average particle size of 1.0 μm and 4.5 μm, respectively, wherein the sole difference is the particle size of the activated carbon powder, we determine that the Examiner's prima facie case of anticipation and of obviousness has not been rebutted by Appellants.

Accordingly, we have again evaluated all of the evidence of anticipation and of obviousness found in Machida alone and as combined with other prior art as applied with Appellants' countervailing evidence of and argument for non-anticipation and nonobviousness, including the evidence in Appellants' Specification and Moriyama Declaration as relied on in the Brief and Reply Brief, and based thereon conclude that the claimed invention encompassed by appealed claims 1 through 5, 9, and 10 would have been anticipated as a matter of fact under 35 U.S.C. § 102(b), and that the claimed invention encompassed by appealed claims 1 through 10 would have been obvious as a matter of law under 35 U.S.C. § 103(a). S*ee, e.g., Spada*, 911 F.2d at 707 n.3, 15 USPQ2d at 1657 n.3.

The Primary Examiner's decision is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv) (2006).

AFFIRMED

clj

Oblon, Spivak, McClelland, Maier & Neustadt, P.C.
1940 Duke Street
Alexandria, VA 22314